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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/620,865 | 07/15/2003 | Daisuke Hanaoka | 245402006600 | 9131 |
| 25226 | 7590 | 04/12/2005 | EXAMINER | |
| MORRISON & FOERSTER LLP 755 PAGE MILL RD PALO ALTO, CA 94304-1018 | | | VAN ROY, TOD THOMAS | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2828 | |

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/620,865

Applicant(s)

HANAOKA, DAISUKE

Examiner

Tod T. Van Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/15/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/15/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig.1 #103, #104, #105. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reid (US 2003/0210720) in view of Onomura et al. (US 2002/0039374).

With respect to claim 1, Reid teaches a semiconductor laser device chip (fig.1) having a semiconductor stacked-layered structure including an n-type layer (fig.1 #9), an active layer (fig.1 #12) and a p-type layer (fig.1 #8') successively stacked on a main surface of a semiconductor substrate (fig.1 #11) and having a ridge stripe structure formed in a portion of said p-type layer (fig.1 #15) wherein said chip has a length L1 of more than 500um in a longitudinal direction of said strip structure ([0048] lines 9-10) and a length L2 of more than 200um in a width direction of said stripe structure ([0048] lines 7-8), and $L1/L2$ is more than 2.5 ($4\text{mm}/.5\text{mm}=8$). Reid does not teach the semiconductor laser device chip to be a nitride semiconductor laser device with a nitride substrate. Onomura teaches a nitride semiconductor laser device chip with an n-type layer (fig.4 #15) an active layer (fig.4 #16) and a p-type layer (fig.4 #19) successively stacked on a main surface of a nitride semiconductor substrate (fig.4 #30) having a ridge stripe structure formed in a portion of said p-type layer (fig.4 #19). It would have been obvious to one of ordinary skill at the time the invention was made to combine the

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semiconductor laser device chip of Reid with the nitride material of Onomura to adjust the wavelength to an appropriate length (active region), and further, to balance the strain induced by the potential lattice mismatch (n and p type layers, also see Onomura [0006-0007]).

With respect to claim 2, the nitride semiconductor laser device as taught by Reid and Onomura further discloses the total thickness of said nitride semiconductor substrate and said nitride semiconductor stacked-layered structure to be more than 50um and less than 200um (Reid, [0046-0047] total thickness approx. 150um).

With respect to claim 3, the nitride semiconductor laser device as taught by Reid and Onomura further discloses said stripe structure to be formed at a position more than 10um away in the width direction of said stripe structure from an edge of said chip (Reid, fig.1 #15, where #15 is clearly centered on the nitride structure and #15 being not more than 7um wide, [0048] lines 6-7).

With respect to claim 4, Onomura further teaches a nitride semiconductor laser apparatus to include a support member for placing the nitride semiconductor laser device chip, as outlined in the rejection to claim 1 above, thereon (Onomura, [0074] lines 1-4).

With respect to claim 5, Onomura further teaches the nitride laser apparatus outlined in the rejection to claim 4 above to include said support member to have a larger thermal expansion coefficient as compared to said nitride semiconductor substrate (Onomura, [0074] lines 1-4, the Cu support member inherently has a larger thermal expansion coefficient as compared with the GaN substrate).

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With respect to claim 6, Onomura further teaches the nitride laser apparatus outlined in the rejection to claim 4 above to include said support member to be one of Al, Ag, Cu, Fe, Al-SiC, CuW and BeO (Onomura, [0074] lines 1-4).

With respect to claim 7, Onomura further teaches the nitride laser apparatus outlined in the rejection to claim 4 above to include a solder joining said laser device chip to said support member, and said solder to be one of AuSn, AgSn, AuSi, AuGe, PbSn, InSn and AgCuSn (Onomura, [0052] lines 5-8).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVR



MINSUN OH HARVEY
PRIMARY EXAMINER